
थर्मल ऊष्मारोधक सामग्रियों
के भंडारण तथा प्रहस्तन हेतु—
आचार संहिता
(पहला पुनरीक्षण)

Storage and Handling of
Thermal Insulation Materials —
Code of Practice
(First Revision)

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Thermal Insulation Sectional Committee had been approved by the Chemical Division Council.

In this revision keeping in view the latest developments in the field, new materials which are being used for thermal insulation are incorporated.

Proper storage and handling of thermal insulation materials are essential because their insulating properties could be severely affected by non-optimum practice. This standard has been formulated to provide minimum requirements relevant to different varieties of Insulating materials.

This standard does not seek to provide information on safety aspects of handling thermal insulation materials, such as safety of workers and work space environment, the regulations for which are being formulated by the Ministry of Labour. Where such safety regulations have been specified, it should be ensured that safety standards issued by the regulatory agency are adhered to.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

STORAGE AND HANDLING OF THERMAL INSULATION MATERIALS — CODE OF PRACTICE

(First Revision)

1 SCOPE

1.1 This standard lays down the recommended practices to be followed for storage and handling of thermal insulation materials before application.

1.2 The materials covered in this standard are as follows:

- a) Rigid materials, such as insulating bricks, preformed calcium silicate/perlite blocks, shapes and pipe sections, rigid polyurethane/polyisocyanurate/phenolic foam blocks and pipe sections, ceramic fibre boards, expanded polystyrene slabs and pipe sections and polyurethane sandwich panels.
- b) Semi-rigid and flexible materials, such as rockwool (loose, bonded slabs, mats and pipe sections), glasswool (bonded slabs, mats and pipe sections), ceramic fibre (loose,

blankets, rope, cloth, paper, tape).

- c) Materials in powder form, such as castable and pourable materials, calcium silicate, mica and exfoliated perlite/vermiculite.

2 STORAGE

2.1 Before storage, the material shall be either in original packages or re-packed properly.

2.2 The recommended maximum stacking height and mode of stacking during storage of insulation materials are given in Table 1. These are given keeping in view the compressibility, physical properties, effect of moisture, handleability and fragile nature of materials. In case the material is stored on racks or in boxes where the upper layers do not have any effect on the material on the lower layers, the height limitations shall be applicable to the clear height within each shelf of such racks.

Table 1 Storage of Thermal Insulation Materials
(Clause 2.2)

Sl. No. (1)	Type of Material (2)	Stacking Height m (3)	Mode of Stacking (4)
i)	Rigid materials:		
	a) Insulating brick	3	Stacked under covered shed one above the other on ground. The space should be free from dampness, fumes and oil. For expanded polystyrene and rigid polyurethane/polyisocyanurate/phenolic foam there should be minimum 0.5 m clear distance from electric lamp and fittings and a 'No Smoking' sign should be displayed near the storage space
	b) Rigid polyurethane polyisocyanurate/phenolic foam slabs	No limit	
	c) Preformed calcium silicate blocks	2	
	d) Ceramic fibre boards	2	
	e) Expanded polystyrene slabs	No limit	
	f) Polyurethane sandwich panels	No limit	
	g) Pipe sections of all materials	2 (subject to manufacturer's confirmation)	
ii)	Semi-rigid and flexible materials:		
	a) Rockwool loose	3	Stacked under covered shed in individual packages. The space should be free from damp, oil, fume and sulphur bearing gases. The bags should be supported on wooden platform (for loose insulation material)
	b) Bonded rockwool (slab, mats)	3	
	c) Bonded glasswool (slab, mats)	3	
	d) Ceramic fibre (loose, blanket, cloth, rope, paper, tape)	3	
	e) Pipe sections of all materials	2 (Subject to manufacturer's confirmation)	
iii)	Powder form material:		
	a) Castable	2	Stacked under covered shed in individual packages. The ground should be free from damp. Wooden planks of suitable thickness shall always be provided over the floor before stacking the bags
	b) Pourable, mica, etc	2	
	c) Calcium silicate	2	
	d) Exfoliated vermiculite/perlite	1.5	

3 HANDLING

3.1 Care should be taken to ensure that in all cases where weather proof packing is given, the packing remains intact after handling. In the case of formed bricks and calcium silicate/perlite or similar blocks and pipe sections, rough handling might result in cracks, scratches and breakage that may render the use of such material difficult and may further reduce insulating properties of the finished insulation incorporating such materials. Careful handling is required to avoid breakage and distortion or tearing off of the bags or cover. Slings and ropes should not be used without adequate external bracing to prevent damage to the contents. In case of fibrous products like mineral wool

(rock and glasswool) and ceramic fibre products, use of hooks or rope slings are to be avoided. In case of polyurethane sandwich panels, care is to be taken to avoid any dragging over each other to prevent scratches or dents on pre-painted metallic sheets, thereby causing damage to the material.

3.2 It is recommended that all personnel handling insulating materials wear suitable protection (by using hand gloves and face mask, etc) since any dislodged particles or fibres should not get in eyes, skin and clothing causing avoidable irritation or injury. It is also important to study the material safety data sheets from the manufacturers and observe all prescribed safety norms relevant to the specific material.

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This Indian Standard has been developed from Doc No.: CHD 27 (1886).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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